QPF Process Implementation Time Line 2: CONUS West of the Continental Divide

Deadlines, Tasks, and Action Office/Region

Completion of the specified tasks will ensure implementation by December 15, 2000 of the primary QPF Process Assessment Team recommendation, adopted by the NWS Corporate Board on June 14, 2000, to implement the modified QPF Process west of the Continental Divide. This time line additionally addresses the implementation of the suite of supporting recommendations, outlined by Director Kelly in a June 19, 2000 memo to the Corporate Board, which include:

- HPC and HAS personnel will produce QPF products for input to river forecast models for all CONUS RFCs;
- the RFC HAS function must take an active role in the QPF Process, especially for the provision of updates for the first 6 hours of each forecast cycle;
- any WFO may produce QPFs for other (internal and external) local uses;
- HPC and HAS QPF products will be distributed to external NWS customers and partners;
- appropriate personnel should complete the new COMET residence courses (Heavy Precipitation and Flash Flood Symposia and the RFC-HPC Hydromet);
- HPC should routinely issue NWP-based freezing level forecasts which are consistent with HPC QPFs for pre-specified WR forecast points beginning NLT October 1, 2000;
- TDL should expand their provision of MOS daily max/min temperature forecasts to include all points critical to hydrologic operations; and
- NWS managers at the national, regional, and local levels must effectively address forecaster apprehension related to this important operational cultural shift.

The QPF Process Implementation Working Group (IWG), empowered by the Corporate Board, will lead the WR QPF Implementation and continue to track implementation actions approved by the Corporate Board on November 12, 1999 (i.e., Implementation Time Line 1). Completion of the remaining Implementation Time Line 1 actions will ensure a) implementation of a national QPF verification system by September 30, 2000, b) APO development of a prototype uniform AWIPS QPF tool by Build 5.2 which satisfies existing HPC, RFC, and WFO requirements (RWP00059) and allows for replacement of legacy software, and c) the delivery of enhanced RFC, HPC, and WFO training to support the implementation of the modified QPF Process nationwide.

The QPF Process IWG membership includes:

- Central Region - Bob Wavrin and Noreen Schwein;
- Eastern Region - Peter Gabrielsen;

- Southern Region - Ben Weiger and Bill Lawrence;
- Western Region - Steve Todd and Harold Opitz;
- NCEP - Dave Reynolds and Brett McDonald;
- OH - Tim Sweeney and John Bradley;
- APO/OSD - Dave Ruth;
- OSO - Lloyd Irvin; and
- OM - Michael Mercer, Dave Helms, and Tom Graziano.

Additional information on QPF Process IWG activities can be found at: http://www.nws.noaa.gov/om/qpi/qpf/iwginfo.htm

September 2000

September 1: Test & validate ftp transmission of SHEF-encoded point QPF and freezing level (or wet-bulb zero height) guidance from HPC to WR RFCs. Action: NCEP/HPC and WR

September 1: Disseminate and coordinate with WR RFCs the NCEP/EMC data cut-off requirements (times) for the "bundled" 1-h Stage III QPE grids to support atmospheric model data assimilation. These requirements are posted on the QPF Process IWG home page. [Note: RFCs will *not* transmit every 1-h Stage III product generated but rather only the most recent/best analyses available *10 minutes prior* to the EMC data cut-off times. These data will be "bundled" and transferred at least 4 times daily.] This will ensure the most recent version of these 1-h QPE grids arrive at the IBM SP by the required time. Action: WR

September 1: Determine whether WR RFCs require SHEF-encoded point freezing level or wet-bulb zero height forecasts for input to NWSRFS. Action: WR

September 5: Provide weekly implementation status update (report) to OM Director for presentation at NWS Director's Tuesday staff meeting with the Corporate Board. Action: OM

September 8: Submit a request to the DRG to a) obtain WMO headers for the SHEF-encoded HPC QPF and freezing level (or wet-bulb zero height) forecast product for WR RFCs, and b) ensure this HPC product is stored in the AWIPS INFORMIX database. Action: OH and NCEP/HPC

September 8: Complete modifications to the Mountain Mapper software application which enable SHEF-encoded point QPF and freezing level (or wet-bulb zero height) forecasts to be ingested for each RFC's complete domain. Action: WR

September 12: Provide weekly implementation status update (report) to OM Director for presentation at NWS Director's Tue staff meeting with the Corporate Board. Action: OM

September 12: Confirm that sufficient resources are available and commit to meeting the actions/milestones listed in this Implementation Time Line. Action: Corporate Board

September 15: Routinely generate at each WR RFC and transmit to the NCEP IBM SP automatic, Stage III-based, 1-h, 4-km, HRAP-gridded, GRIB-encoded "bundled" QPEs in accordance with NCEP/EMC's EDAS data cut-off requirements. Action: WR

September 15: Complete development of post-processing software which converts Mountain Mapper generated grids from ASCII to XMRG format. (Note: HRL GRIBIT code will subsequently be used by WR RFCs to convert grids from XMRG to GRIB format before transmission on the AWIPS WAN). Action: WR

September 15: Coordinate with OSO to establish IWIN link to NPVU home page for WR QPF products. Action: OM

September 15: Coordinate with OSO to disable IWIN access to WFO QPS products by end of OT&E. Action: OM

September 15: Provide OSD/TDL a complete list of RFC forecast points for which daily MOS maximum and minimum temperature guidance is required.. This list should include both the current forecast points included in the TDL FTPxxx product (where xxx = RFC AWIPS ID) ***and*** additional points for which forecast guidance is required to support critical NWSRFS operations. TDL needs the station location (latitude and longitude) and elevation for each of these forecast points. TDL will cross reference this list with their data archive to determine whether sufficient observational data are available to develop new MRF & AVN MOS equations/guidance for these forecast points. [Note: If additional data are required, TDL will need a minimum of two years of reliable and routine daily max/min temperature observations in text format. TDL plans to produce the expanded FTPxxx product twice per day with issuances at approximately 0900 UTC and 1700 UTC. The 0900 UTC issuance of the FTPxxx product will based upon the 0000 UTC run of the MRF through Day 7 (i.e., 180 hr projection). The 1700 UTC issuance of the FTPxxx product will be based upon the 1200 UTC run of the AVN through Day 3 (i.e., 72 hr projection) and the prior 0000 UTC run of the MRF for Days 4 through 7 (i.e., projections out to 168 hrs).] Action: WR

September 19: Provide weekly implementation status update (report) to OM Director for presentation at NWS Director's Tue staff meeting with the Corporate Board. Action: OM

September 22: Implement new/modified version of Mountain Mapper at WR RFCs. Action: WR

September 22: Disseminate to WR field offices backup procedures for the HPC QPF products. Action: NCEP/HPC

September 22: Coordinate the start date/duration of the WR OT&E with RFCs and associated

WFOs. Ensure RFC and WFO staffs understand how the QPF process modifications, approved at the June 14, 2000 Director's Meeting, impact their responsibilities (e.g., QPF product generation, coordination). Action: WR

September 22: Complete consensus plan for two-month OT&E for modified QPF process. Action: OM and QPF Process IWG

September 26: Provide weekly implementation status update (report) to OM Director for presentation at NWS Director's Tue staff meeting with the Corporate Board. Action: OM

September 27: Demonstrate transmission of RFC generated a) text QPS and HYD products and b) gridded FFG products to NCEP IBM SP via AWIPS WAN. Action: APO

September 28: Complete implementation of APO/FSL AWIPS QPF patch (released in August 2000) to display individual and mosaic gridded RFC QPFs in D2D. Action: WR

September 29: Provide the WR RFCs a list of forecasts points for which additional daily max/min temperature observations are required to develop MOS daily max/min temperature guidance. Action: OSD/TDL

September 29: Implement HAS web-based problem and/or suggestion log for OT&E. Action: OM

September 29: Routinely generate at each WR RFC and transmit to the NCEP IBM SP Mountain Mapper-based, 6-h, 4-km, HRAP-gridded, GRIB-encoded QPEs, for the 1200 -1200 UTC period. These HAS quality-assured QPEs should be transmitted daily to the IBM SP by 2100 UTC via the AWIPS WAN. NCEP/EMC will generate a CONUS mosaic of these grids and transmit them back to the field for display in AWIPS D2D (Build 5.1.1). Prior to Build 5.1.1, these QPEs will be posted to the NPVU home page. [Note: This data cut-off time was agreed to by the QPF Process IWG in March 2000.] Action: WR

October 2000

October 1: Implement updated procedures for coordination of QPFs between HPC and the WR RFCs and provide WR RFCs (& associated WFOs) the HPC routine coordination & blast-up phone numbers. Action: NCEP/HPC

October 1: Ensure WR RFCs can store the SHEF-encoded HPC QPF and freezing level (or wet-bulb zero height) forecast product in the AWIPS INFORMIX database. Action: APO

October 1: Implement updated internal regional procedures for a) coordination of QPFs between HPC, RFCs, and associated WFOs and b) service backup. Action: WR

October 1: Add HPC as an addressee on RFC HAS-generated HCM and HMD messages. Action: WR

October 1: Ensure WR WFOs preprogram blast up coordination call phone listings to include RFCs and HPC. Action: WR

October 1: Begin routine generation and provision of SHEF-encoded point QPF and freezing level (or wet-bulb zero height) guidance to WR RFCs. Action: NCEP/HPC

October 3: Provide weekly implementation status update (report) to OM Director for presentation at NWS Director's Tue staff meeting with the Corporate Board. Action: OM

October 8: Begin weekly QPF Process IWG coordination calls. Action: OM & QPF Process IWG

October 10: Provide weekly implementation status update (report) to OM Director for presentation at NWS Director's Tue staff meeting with the Corporate Board. Action: OM

October 17: Begin two-month OT&E for modified QPF process in WR. WFOs associated with the WR RFCs will not produce QPF for input to NWSRFS. Action: NCEP/WR

October 17: Ensure WR RFC HAS forecasters routinely complete the web-based HAS log prior to the completion of each HAS forecaster function shift during the two-month OT&E. Action: WR

October 17: Routinely generate at each WR RFC and transmit to the NCEP IBM SP: a) Mountain Mapper-based, 6-h, 10-km, GRIB-encoded QPFs on the AWIPS 218 grid, for the 1200 -1200 UTC period (and 0000-0000 UTC period if applicable); b) the QPS text product for the RFC domain; and c) the text HYD bulletin. These HAS QPF products should be transmitted to the IBM SP via the AWIPS WAN as soon as they are available. [Note: These products will be posted to the NPVU homepage and will be identified by the NPVU as "*Most recent QPF input to the National Weather Service River Forecast System."*] Action: WR

October 17: Provide weekly implementation status update (report) to OM Director for presentation at NWS Director's Tue staff meeting with the Corporate Board. Action: OM

October 20: Provide OSD/TDL any additional observational data required to develop MOS daily maximum and minimum temperature guidance critical for NWSRFS operations. TDL requires these observational data in text format and needs a minimum of two years of reliable and routine daily max/min temperature observations to develop MOS equations/guidance for the RFC-specified forecast points. [Note: For each forecast point, RFCs must specify the valid period for the daily max/min temperature observations (e.g., midnight-midnight local time , 0700-0700 local time, etc.)] Action: WR

October 21: Enhance NPVU/HPC home page to enable access to the most recent issuances of the

following RFC products: a) graphic QPF; b) text QPS; c) text HYD bulletin; d) graphic 6-h aggregate QPE; and e) graphic FFG. [Note: It is envisioned that the GUI will be a map of the CONUS with a state boundary underlay and "interactive" RFC domains which enable access to RFC graphic and text products. A link will also be provided to access graphic HPC QPFs, and the national 6-h QPE mosaics generated daily by EMC for the 1200-1200 UTC cycle]. Action: NPVU

October 21: Establish IWIN link to NPVU for WR QPF products. Action: OSO

October 21: Notify users the new products available at NPVU home page. Action: OM

October 22: Begin weekly provision of RFC HAS forecaster log results to QPF Process IWG members. Action: OM

October 24: Provide weekly implementation status update (report) to OM Director for presentation at NWS Director's Tue staff meeting with the Corporate Board. Action: OM

October 28: Begin routine generation of national mosaic of 6-h gridded QPE products. Action: NCEP/EMC

October 31: Provide weekly implementation status update (report) to OM Director for presentation at NWS Director's Tue staff meeting with the Corporate Board. Action: OM

November 2000

November 7: Provide weekly implementation status update (report) to OM Director for presentation at NWS Director's Tue staff meeting with the Corporate Board. Action: OM

November 10: Develop and provide to the QPF Process IWG (for coordination with the field) a schedule which will ensure delivery, by February 28, 2001, of expanded MOS max/min temperature guidance for forecast points specified by WR RFCs. Action: OSD/TDL

November 14: Provide weekly implementation status update (report) to OM Director for presentation at NWS Director's Tue staff meeting with the Corporate Board. Action: OM

November 15: Provide OSD/TDL a complete list of RFC forecast points for which daily MOS maximum and minimum temperature guidance is required.. This list should include both the current forecast points included in the TDL FTPxxx product (where xxx = RFC AWIPS ID) ***and*** additional points for which forecast guidance is required to support critical NWSRFS operations. TDL needs the station location (latitude and longitude) and elevation for each of these forecast points. TDL will cross reference this list with their data archive to determine whether sufficient observational data are available to develop new MRF & AVN MOS equations/guidance for these forecast points. [Note: If additional data are required, TDL will need a minimum of two years of reliable and routine daily

max/min temperature observations in text format. TDL plans to produce the expanded FTPxxx product twice per day with issuances at approximately 0900 UTC and 1700 UTC. The 0900 UTC issuance of the FTPxxx product will based upon the 0000 UTC run of the MRF through Day 7 (i.e., 180 hr projection). The 1700 UTC issuance of the FTPxxx product will be based upon the 1200 UTC run of the AVN through Day 3 (i.e., 72 hr projection) and the prior 0000 UTC run of the MRF for Days 4 through 7 (i.e., projections out to 168 hrs).] Action: ER, CR, SR, and AR

November 21: Provide weekly implementation status update (report) to OM Director for presentation at NWS Director's Tue staff meeting with the Corporate Board. Action: OM

November 21: Complete an assessment to determine whether (and when if possible) NMAP can be modified to include Mountain Mapper functionality and meet the needs of WR RFCs. Action: OM, NCEP, and WR

November 28: Provide weekly implementation status update (report) to OM Director for presentation at NWS Director's Tue staff meeting with the Corporate Board. Action: OM

December 2000

December 5: Provide weekly implementation status update (report) to OM Director for presentation at NWS Director's Tue staff meeting with the Corporate Board. Action: OM

December 12: Provide weekly implementation status update (report) to OM Director for presentation at NWS Director's Tue staff meeting with the Corporate Board. Action: OM

December 15: Conclude two-month OT&E for modified QPF process in WR. Action: NCEP/WR

December 19: Provide weekly implementation status update (report) to OM Director for presentation at NWS Director's Tue staff meeting with the Corporate Board. Action: OM

December 21: Provide the ER, CR, SR, and AR RFCs a list of forecasts points for which additional daily max/min temperature observations are required to develop MOS daily max/min temperature guidance. Action: OSD/TDL

December 22: If operational capability is successfully demonstrated during OT&E, formally implement the modified QPF process at CBRFC, NWRFC, and CNRFC. Indefinitely relieve associated WFOs of the responsibility for generating QPF and freezing level forecasts for input to NWSRFS. Action: QPF Process IWG

December 23: Provide CFO FY 01 and FY 02 resource assessment/impacts for implementation of modified QPF process. Action: OM/QPF Process IWG

December 26: Provide weekly implementation status update (report) to OM Director for presentation at NWS Director's Tue staff meeting with the Corporate Board. Action: OM

January 2001

January 2: Provide weekly implementation status update (report) to OM Director for presentation at NWS Director's Tue staff meeting with the Corporate Board. Action: OM

January 9: Provide weekly implementation status update (report) to OM Director for presentation at NWS Director's Tue staff meeting with the Corporate Board. Action: OM

January 14: CFO responds to QPF Process IWG on FY01 and FY02 resource request. Action: CFO

January 16: Provide weekly implementation status update (report) to OM Director for presentation at NWS Director's Tue staff meeting with the Corporate Board. Action: OM

January 31: Provide OSD/TDL any additional observational data required to develop MOS daily maximum and minimum temperature guidance critical for NWSRFS operations. TDL requires these observational data in text format and needs a minimum of two years of reliable and routine daily max/min temperature observations to develop MOS equations/guidance for the RFC-specified forecast points. [Note: For each forecast point, RFCs must specify the valid period for the daily max/min temperature observations (e.g., midnight-midnight local time , 0700-0700 local time, etc.)] Action: ER, CR, SR, and AR

February 2001

February 28: Develop and provide to the QPF Process IWG (for coordination with the field) a delivery schedule for expanded MOS max/min temperature guidance for additional forecast points specified by ER, CR, SR, and AR RFCs. Action: OSD/TDL

February 28: Implement the expanded FTPxxx product for the NWRFC, CNRFC, and the CBRFC and issue twice per day at approximately 0900 UTC and 1700 UTC. [Note: This implementation date is contingent upon TDL receipt of the required daily max/min temperature observations from these WR RFCs by October 20, 2000.]. Action: OSD/TDL